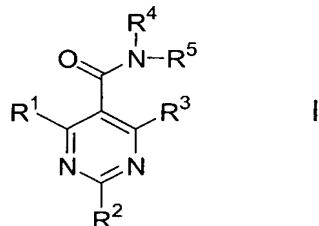


CLAIMS

We claim:

- 5 1. A method for the treatment of disorders responsive to opening of the KCNQ potassium channels in a mammal in need thereof, which comprises administering to said mammal a therapeutically effective amount of a compound of Formula I



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wherein

R<sup>1</sup> is selected from hydrogen, halogen, C<sub>1-8</sub>alkyl, phenyl, phenylalkyl, C<sub>3-6</sub>heterocyclic, C<sub>3-6</sub>heterocyclicmethyl, -CN, -OR, -NRR, -NRNCOR or -CF<sub>3</sub>;

15 R<sup>2</sup> is selected from halogen, C<sub>1-8</sub>alkyl, C<sub>3-7</sub>cycloalkyl, phenyl, phenylalkyl, C<sub>3-6</sub>heterocyclic, C<sub>3-6</sub>heterocyclicmethyl, -CN, -OR, -NRR, -NRNCOR or -S-R;

R<sup>3</sup> is selected from hydrogen, halogen or C<sub>1-8</sub>alkyl;

R<sup>4</sup> is selected from hydrogen, -CH<sub>3</sub> or -CH<sub>2</sub>C<sub>6</sub>H<sub>5</sub>;

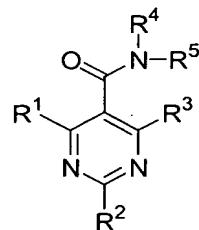
20 R<sup>5</sup> is selected from hydrogen, C<sub>1-8</sub>alkyl, C<sub>3-7</sub>cycloalkyl, phenyl, phenylalkyl, C<sub>3-6</sub>heterocyclic or C<sub>3-6</sub>heterocyclicmethyl;

wherein each occurrence of R is independently selected from the group consisting of C<sub>1-8</sub>alkyl, C<sub>3-7</sub>alkynyl, phenyl, phenylalkyl, C<sub>3-6</sub>heterocyclic and C<sub>3-6</sub>heterocyclicmethyl.

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2. The method of claim 1 wherein the compound of Formula I is selected from a compound having the structure

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wherein

$\text{R}^1$  is hydrogen;

$\text{R}^2$  is selected from the group consisting of  $\text{NR}^6\text{R}^7$ ,  $\text{SR}^8$ ,  $\text{OR}^9$ , phenyl, and

5           thienyl; in which said phenyl is optionally substituted with one or  
two  $\text{C}_{1-3}$ alkoxy groups;

$\text{R}^3$  is selected from the group consisting of  $\text{C}_{1-6}$ alkyl, trifluoromethyl,

$\text{C}_{3-7}$ cycloalkyl,  $\text{C}_{3-7}$ cycloalkylmethyl, phenyl, amino,

di( $\text{C}_{1-3}$ alkyl)amino and pyrrolidinyl; in which said phenyl is optionally

10          substituted with a halogen;

$\text{R}^4$  is selected from the group consisting of phenylmethyl, furanylmethyl,

and  $\text{C}_{3-7}$ cycloalkylmethyl; in which the phenyl of said phenylmethyl

is optionally substituted with one substituent selected from the

group consisting of halogen,  $\text{C}_{1-3}$ alkyl, di( $\text{C}_{1-3}$ alkyl)amino,

15          trifluoromethyl, trifluoromethoxy, and trifluoromethylthio; and in

which the furanyl of said furanylmethyl is optionally substituted with  
a  $\text{C}_{1-3}$ alkyl group;

$\text{R}^5$  is hydrogen;

$\text{R}^6$  and  $\text{R}^7$  are each independently selected from the group consisting of

20          hydrogen,  $\text{C}_{1-6}$ alkyl,  $\text{C}_{3-7}$ cycloalkyl,  $\text{C}_{3-7}$ alkynyl, phenyl, and

phenylmethyl; in which said  $\text{C}_{1-6}$ alkyl is optionally substituted with a

hydroxy group and in which said phenyl is optionally substituted

with one or two substituents selected from the group consisting of

halogen, trifluoromethoxy, and nitro; or  $\text{R}^6$  and  $\text{R}^7$  taken together

25          with the nitrogen to which they are attached form a heterocyclic

ring selected from the group consisting of pyrrolidinyl, morpholinyl,

piperidinyl, homopiperidinyl, methylpiperidinyl, and 1,2,3,4-

tetrahydridoisoquinolinyl;

R<sup>8</sup> is selected from the group consisting of C<sub>1-6</sub>alkyl, C<sub>3-7</sub>cycloalkyl, phenyl, phenylmethyl, furanymethyl, and thienyl; in which said phenyl is optionally substituted with one halogen or nitro group; and

5 wherein the phenyl of said phenylmethyl is optionally substituted with one halogen or C<sub>1-3</sub>alkyl group; and

R<sup>9</sup> is selected from the group consisting of C<sub>3-7</sub>alkynyl, phenyl, 1-(4-fluorophenyl)ethyl, and thienylmethyl; in which said phenyl is optionally substituted with a halogen or C<sub>1-3</sub>alkoxy group.

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3. The method of claim 1 wherein said disorder is migraine or migraine-like attack.

4. The method of claim 2 wherein said disorder is migraine or

15 migraine-like attack.

5. A pharmaceutical composition for the treatment of disorders responsive to opening of KCNQ potassium channels comprising a therapeutically effective amount of the compound of claim 1 in association 20 with a pharmaceutically acceptable carrier, adjuvant or diluent.

6. A pharmaceutical composition for the treatment of disorders responsive to opening of KCNQ potassium channels comprising a therapeutically effective amount of the compound of claim 2 in association 25 with a pharmaceutically acceptable carrier, adjuvant or diluent.